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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/783,057

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Tadayuki Fujiwara

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EXAMINER

SUGLO, JANET L

ART UNIT

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2857

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/783,057	<b>Applicant(s)</b> FUJIWARA ET AL.	
	<b>Examiner</b> JANET L. SUGLO	<b>Art Unit</b> 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. The action is responsive to the Amendment filed on December 22, 2008. Claims 1-5, 7, 8 and 10-13 are pending. Claim 4 has been amended. Claims 6 and 9 have been cancelled. Claims 12 and 13 are new.

### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claims 4, 5, 10, 11 and 13** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A statutory process must (1) be tied to another statutory class (a particular machine or apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. If neither of these requirements is met by the claim, the method is not a patent eligible process under § 101 and is directed to non-statutory subject matter. An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should *positively recite* the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state (In re *Bilski*). None of claims 4, 5, 10,

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11 and 13 positively recite the other statutory class to which they are tied. All claims are drawn to a method. None of the *critical steps* are explicitly or inherently tied to a machine. The body of the claim should have more direct ties to the other statutory class.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 4, 7, 10, 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Patent 6,473,664) (hereinafter "Lee") in view of Dow et al. (US Patent 5,351,247) (hereinafter "Dow").

With respect to **claim 1**, Lee teaches an apparatus for managing a liquid crystal substrate (Lee: col 1, ln 10-12) comprising:

a liquid crystal testing device operable to determine whether at least one of a panel (Lee: col 11, ln 42) and a substrate (Lee: col 3, ln 1-2) in the liquid crystal substrate has a defect (Lee: col 7, ln 47-55), and acquire defect information indicative of at least the defect and whether the at least one of the panel and the substrate is defective (Lee: col 3, ln 41-52; col 9, ln 55-65);

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a liquid crystal repair device operable to repair the defect based on the defect information (Lee: col 5, ln 46-55; col 7, ln 47-55), and acquire repair information that is indicative of whether the defect is actually repaired (Lee: Figures 4 and 5; col 5, ln 51-55; col 6, ln 5-21; col 7, ln 47-55); and

a data management section having a database adapted to record the defect information which is acquired from the liquid crystal testing device (Lee: e.g., Host, File Server) (Lee: Figure 4: 100, 110; col 9, ln 55-65), and the repair information (Lee: col 5, ln 50-55) which is acquired from the liquid crystal repair device (Lee: col 5, ln 50-55), wherein

said data management section is operable to redetermine the presence of the defect based on the defect information (Lee: col 10, ln 1-16) and the repair information which are recorded in said database (Lee: Figure 4: 100, 110; Figure 5; col 2, ln 44-58; col 5, ln 50-55, col 7, ln 46-55; col 9, ln 55-65. Lee states in the previous passages that each machine shares the job result data of the previous machine. As he describes the second machine as a repair machine, the repair information is being passed to the second machine to be manipulated again.),

said liquid crystal repair device is operable to correct the defect information to generate corrected defect information when the defect indicated by the defect information is different from the defect indicated by the repair information (Lee: Each process causes both raw data and summary data to be saved; col 5, ln 46-59; col 6, ln 42-48; col 8, ln 51 – col 9, ln 10); and

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said data management section is operable to update the defect information recorded in said database with the corrected defect information (Lee: col 5, ln 51-59; col 6, ln 42-48; col 8, ln 15-19; col 8, ln 51 – col 9, ln 10; col 9, ln 55-65).

Lee does not explicitly teach redetermining the presence of the defect based on comparison between the defect information and the repair information. Dow teaches redetermining the presence of the defect based on comparison between the defect information and the repair information which are recorded in said database (Dow: col 1, ln 17-18; col 8, ln 53 – col 9, ln 6). Dow further teaches correct the defect information to generate corrected defect information when the defect indicated by the defect information is different from the defect indicated by the repair information and said data management section is operable to update the defect information recorded in said database with the corrected defect information (Dow: col 8, ln 6-68; col 11, ln 8-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee to include the comparison of Dow because it will more accurately determine faults and proper repair procedures (Dow: col 3, ln 11-21).

With respect to **claim 4**, Lee teaches a method for managing a liquid crystal substrate (Lee: col 1, ln 10-12) comprising:

determining whether at least one of a panel (Lee: col 11, ln 42) and a substrate (Lee: col 3, ln 1-2) in the liquid crystal substrate has a defect (Lee: col 7, ln 47-55), and acquire defect information indicative of at least the defect and whether the at least one of the panel and the substrate is defective (Lee: col 3, ln 41-52; col 9, ln 55-65);

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repairing the defect based on the defect information (Lee: col 5, ln 46-55; col 7, ln 47-55), and acquires repair information indicative of at least a position that is actually repaired (Lee: Figures 4 and 5; col 6, ln 5-21; col 7, ln 47-55);

recording, in a database, the defect information which is acquired from a liquid crystal testing device (Lee: Figure 4: 100, 110; col 9, ln 55-65), and the repair information (col 5, ln 50-55) which is acquired from a liquid crystal repair device (Lee: col 5, ln 50-55);

redetermining the presence of the defect based on the defect information (Lee: col 10, ln 1-16) and the repair information which are recorded in said database (Lee: Figure 4: 100, 110; Figure 5; col 2, ln 44-58; col 5, ln 50-55, col 7, ln 46-55; col 9, ln 55-65. Lee states in the previous passages that each machine shares the job result data of the previous machine. As he describes the second machine as a repair machine, the repair information is being passed to the second machine to be manipulated again.),

correcting defect information to generate corrected information when the defect indicated by the defect information is different from the defect indicated by the repair information with regard to the defect (Lee: Each process causes both raw data and summary data to be saved; col 5, ln 51-59; col 6, ln 42-48; col 8, ln 51 – col 9, ln 10); and

updating the defect information recorded in said database with the corrected defect information (Lee: col 5, ln 51-59; col 6, ln 42-48; col 8, ln 51 – col 9, ln 10; col 9, ln 55-65).

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Lee does not explicitly teach redetermining the presence of the defect based on comparison between the defect information and the repair information. Dow teaches redetermining the presence of the defect based on comparison between the defect information and the repair information which are recorded in said database (Dow: col 1, ln 17-18; col 8, ln 53 – col 9, ln 6). Dow further teaches correcting the defect information to generate corrected defect information when the defect indicated by the defect information is different from the defect indicated by the repair information and updating the defect information recorded in said database with the corrected defect information (Dow: col 8, ln 6-68; col 11, ln 8-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee to include the comparison of Dow because it will more accurately determine faults and proper repair procedures (Dow: col 3, ln 11-21).

With respect to **claim 7**, Lee teaches the repair information includes image information of a part of the at least one of the panel and the substrate that is actually repaired (Lee: col 5, ln 18-28; col 6, ln 43-47).

With respect to **claim 10**, Lee teaches the repair information includes image information of a part of the at least one of the panel and the substrate that is actually repaired (Lee: col 5, ln 18-28; col 6, ln 43-47).



With respect to **claims 12 and 13**, Lee teaches the corrected defect information is generated as a part of the repair information; and the defect information is updated when the repair information includes the corrected defect information (col 5, ln 51-59; col 6, ln 12-21; col 6, ln 42-48; col 7, ln 46-55; col 8, ln 15-19; col 8, ln 51 – col 9, ln 10; col 9, ln 55-65).

6. **Claims 2, 3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dow and further in view of Miura et al. (US Patent 6,282,457) (hereinafter “Miura”).

With respect to **claim 2**, Lee further teaches said data management section stores a recipe information for defining specifications of the substrate and panel in said database (Lee: col 8, ln 64 - col 9, ln 6). Lee further teaches that the user inputs necessary data when data is processed abnormally (Lee: col 10, ln 17-20). Lee and Dow do not specify that said recipe information is edited freely. Miura teaches a method and apparatus for processing liquid crystal panel substrates (Miura: col 13, ln 20-22) including adjusting or finely modifying the recipes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the recipe modifications of Miura because this ensures an optimal exposure recipe resulting in more efficient processing (Miura: col 2, ln 59-62; col 12, ln 46-47).

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With respect to **claim 3**, Lee further teaches a terminal connected to the data management system where a user can input information (Lee: col 10, ln 17-20). Lee and Dow do not teach that the data management section edits the recipe information by exchange of information with the terminal. Miura teaches a method and apparatus for processing liquid crystal panel substrates (Miura: col 13, ln 20-22) including adjusting or finely modifying the recipes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the recipe modifications of Miura because this ensures an optimal exposure recipe resulting in more efficient processing (Miura: col 2, ln 59-62; col 12, ln 46-47).

With respect to **claim 5**, Lee further teaches recording a recipe information acquired from the liquid crystal testing device in the database, the recipe information defining specifications of the substrate and panel (Lee: col 8, ln 64 - col 9, ln 6). Lee further teaches that the user inputs necessary data when data is processed abnormally (Lee: col 10, ln 17-20). Lee and Dow do not specify that said recipe information is edited freely. Miura teaches a method and apparatus for processing liquid crystal panel substrates (Miura: col 13, ln 20-22) including adjusting or finely modifying the recipes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the recipe modifications of Miura because this ensures an optimal exposure recipe resulting in more efficient processing (Miura: col 2, ln 59-62; col 12, ln 46-47).

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7. **Claims 8 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dow and further in view of Hiroi et al. (US PGPub 2003/0063792) (hereinafter "Hiroi").

With respect to **claim 8**, Lee and Dow teach all limitations of parent claim 1 and Lee further teaches that various statistical processes are carried out on the raw and summary data of the liquid crystal substrates (Lee: col 6, ln 39-41; col 7, ln 30-34; col 11, ln 20-24; col 11, ln 50-54) with respect to the defect information and the repair information (Lee: col 5, ln 46-55; col 6, ln 40-47; col 7, ln 46-55; col 11, ln 48-54). Lee and Dow do not explicitly teach acquiring trend information for defects of a plurality of liquid crystal substrates. Hiroi teaches acquiring trend information for defects of a plurality of liquid crystal substrates (Hiroi: Abstract; Figure 5; [0013], [0019], [0034]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the trend analysis of Hiroi because trend data allows defect analysis to be utilized effectively and thereby saving processing time and money (Hiroi: [0034]).

With respect to **claim 11**, Lee and Dow teach all limitations of parent claim 4 and Lee further teaches that various statistical processes are carried out on the raw and summary data of the liquid crystal substrates (Lee: col 6, ln 39-41; col 7, ln 30-34; col 11, ln 20-24; col 11, ln 50-54) with respect to the defect information and the repair information (Lee: col 5, ln 46-55; col 6, ln 40-47; col 7, ln 46-55; col 11, ln 48-54). Lee

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and Dow do not explicitly teach acquiring trend information for defects of a plurality of liquid crystal substrates. Hiroi teaches acquiring trend information for defects of a plurality of liquid crystal substrates (Hiroi: Abstract; Figure 5; [0013], [0019], [0034]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the trend analysis of Hiroi because trend data allows defect analysis to be utilized effectively and thereby saving processing time and money (Hiroi: [0034]).

### ***Response to Arguments***

8. Applicant's arguments filed December 22, 2008 have been fully considered but they are not persuasive.

Applicant argues on the bottom of page 8 of arguments filed December 22, 2008 that "the claimed data management section should be corresponded to only the file server (400) because the above test results data and the above repair result data are not stored in the host (100, 1000), but only the file server (400, 900); However, Applicant's arguments are not well taken. First, Lee states in col 8, ln 15-19, that the host contains a database to store the job result data, so therefore the results data *is* stored in the host. Second, a data management section of a system is the section of the system that manages data. Both the file server and the host together are the data management section of Lee as they both manage the data of the system. Applicant's remaining arguments with respect to Lee are all based on the argument that the data

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management system can allegedly only correspond to the file server, however as explained above, both the host and the file server are the data management section of Lee.

Applicant argues that Lee does not teach the data management section is operable to update the defect information recorded in said database with the corrected defect information; however, Applicant's arguments are not well taken. Lee teaches that after each machine carries out its method, summary data is sent to a database. The summary data includes repair information which would be updated defect information (Lee: col 5, ln 51-59; col 6, ln 12-21; col 6, ln 42-48; col 7, ln 46-55; col 8, ln 15-19; col 8, ln 51 – col 9, ln 10; col 9, ln 55-65).

Applicant argues that Dow does not teach redetermining the presence of the defect based on comparison between the defect information and the repair information which are recorded in said database; however, Applicant's arguments are not well taken. Dow teaches the corrective action (repair information) and data pattern (fault information) are stored in a database. If a fault is still detected in the corrective action data, then the fault is considered not corrected, but if the fault is not detected in the corrective action data, then the fault is considered corrected. The "if" statement is carrying out a comparison in order to reach a conclusion as to whether the repair was successful (Dow: col 8, ln 53 – col 9, ln 6).

Applicant argues that Miura and Hiroi do not teach redetermining the presence of the defect based on comparison between the defect information and the repair information which are recorded in said database; however, Applicant's arguments are not well taken. Miura and Hiroi are not relied upon to teach the above limitation. Dow teaches this limitation as shown above.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baker et al. (US Patent 4,847,795) teaches a system for diagnosing defects in electronic assemblies. A knowledge base is updated based upon information regarding whether the recommended repair procedure eliminated the defect (Baker: Abstract; col 2, ln 5-17). Baker et al. further teaches retesting the failed assembly after repair and re-diagnoses the assembly updating knowledge base based upon results (Baker: col 8, ln 36 – col 9, ln 30).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANET L. SUGLO whose telephone number is (571)272-8584. The examiner can normally be reached on M-F from 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JANET L SUGLO/  
Examiner, Art Unit 2857

/Eliseo Ramos-Feliciano/  
Supervisory Patent Examiner, Art Unit 2857